In the Claims:

Claims 1-14 (Cancelled)

Claims 15 (Previously amended) : A hybrid electric vehicle (HEV) comprising:

an internal combustion engine;
an electric traction motor;
a storage battery for furnishing power to the traction motor;
an engine temperature sensor;
a battery state of charge indicator;
a vehicle system controller (VSC) for receiving a temperature signal from the engine temperature sensor and a state of charge signal from the battery state of charge indicator; and
an engine control unit operated by the VSC, with the engine control unit being directed to operate the engine in a fail-safe mode in the event that the engine temperature exceeds a predetermined temperature threshold, with said engine controller halting the engine and powering the vehicle solely with the traction motor if the battery state of charge is greater than a predetermined charge threshold, and with said engine controller operating the engine on alternating cylinders in the event that the engine temperature exceeds the predetermined temperature threshold and the battery state of charge is less than said predetermined charge threshold.

Claim 16 (Previously Added): A fail-safe engine cooling system according to Claim 15, wherein said VSC directs the engine controller to operate the engine on alternating cylinders when the speed of the HEV exceeds a predetermined speed threshold and the engine temperature exceeds said predetermined temperature threshold.

Claim 17 (Previously added): A fail-safe engine cooling system according to Claim 15, wherein said VSC directs the engine controller to operate the engine on alternating cylinders when an air conditioning system incorporated in the HEV is operating and the engine temperature exceeds said predetermined temperature threshold.

Claim 18 (Previously amended): A method for operating an engine in a hybrid electric vehicle having both an internal combustion engine and a traction motor, with said method comprising the steps of:

measuring an operating temperature of the engine;

measuring a state of charge of an electric storage device connected to said traction motor; and

in the event that said operating temperature exceeds a predetermined temperature threshold and said state of charge is less than a predetermined charge threshold, operating the engine on alternating cylinders so as to lower the operating temperature of the engine, and in the further event that said operating temperature exceeds the predetermined temperature threshold and said state of charge is greater than the predetermined charge threshold, powering the vehicle solely with the traction motor.

REMARKS

Claims 15-18 are in the application. Each of these Claims stands rejected under 35 USC 103 as being unpatentable over Kitada in view of Gopp.

The claimed invention is a system and method for operating an HEV with an overheated engine. In the event that, the traction battery has sufficient charge, the engine will be shut down. If, however, the traction battery is sufficiently discharged, the engine will not be shut down. Rather, the engine will be operated on alternating cylinders.

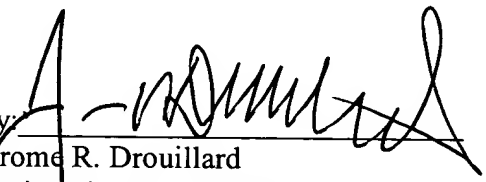
In making his rejection the Examiner states that Kitada does not disclose an engine controller operating engine for an HEV on alternating cylinders when the engine temperature exceeds a predetermined temperature threshold and the battery state of charge is less than the predetermined charge threshold. He continues that Gopp discloses an engine controller operating the engine on alternating cylinders when the engine temperature exceeds a predetermined temperature threshold for the purpose of protecting the engine from overheating. He continues with the argument that it would have been obvious to one having ordinary skill in the art at the time the invention was made to design a hybrid vehicle as taught by Kitada and provide an engine controller operating the engine on alternating cylinders when the engine temperature exceeds the predetermined temperature threshold, as taught by Gopp, for the purpose of protecting the engine. Applicant respectfully transverses this rejection and requests that each of the claims remaining in this case be reconsidered in view of these remarks and passed to issue over the Examiner's rejection.

The fact is that neither Gopp, nor Kitada, whether taken singly, or in combination with each other either teach or suggest Applicant's claimed invention. Gopp, which was cited and discussed by Applicant in his specification, teaches but one thing about operating an engine if a temperature threshold is exceeded: the engine should be operated on alternating cylinders. Kitada, on the other hand, teaches that if an engine operating temperature exceeds a threshold two states are possible. First, if the battery charge exceeds a threshold the engine should be shut down and the vehicle operated on the battery. Secondly, if the engine temperature exceeds a threshold and the battery charges is less than a certain

threshold amount, the engine should still be shut down. In other words, with Kitada, if the engine temperature exceeds a certain threshold, the engine is always shut down whereas with Gopp, if the engine exceeds a certain temperature it is never shut down. Thus, the teachings of Kitada and Gopp are diametrically opposed. In contrast, with Applicant's claimed device, if the engine temperature exceeds a threshold, it will be shut down if the charge of the battery exceeds a threshold amount. If, on the other hand, the charge is less than the threshold amount, the engine will be operated on alternating cylinders. This is a significant difference because in many cases it is not possible for environmental reasons to operate the vehicle using the engine, and battery operation preserves motive operation, while allowing for the possibility of engine operation in an event that the engine is overheated and the traction battery is depleted.

The fact is that neither Kitada, nor Gopp, whether taken singly or in combination with each other either teaches or suggests the capability to deal with an overheated engine by operating it during one condition, but not operating the engine during another condition. The Kitada and Gopp references do not admit of any possibility that an overheated engine powering an HEV may be operated preferentially depending upon the state of charge of the traction battery. As such, each of the Claims remaining in this case is allowable over the combination of Kitada and Gopp and should be passed the issue. Such action is earnestly solicited.

Dykema Gossett PLLC



By: _____
Jerome R. Drouillard
Registration No. 28,008
315 E. Eisenhower Parkway,
Suite 100
Ann Arbor, MI. 48108
(734) 214-7670